

of crabs landed on a daily basis. For example, to the extent that crab boat operators frequently change fish pot locations in search of optimal fishing grounds, this activity could be slightly affected by extension of some existing slow speed zones (FWCC, 2003a).

In 2001, blue crab landings in Lee County were 175,805 kilograms (387,585 pounds), and the weighted average price was \$1.06 per 0.5 kilograms (pound) for blue crab statewide. The entire value of the blue crab fishery in Lee County is estimated to be \$411,167 (FWCC: FMRI, 2003). Only a very small portion of this value is likely to be affected, as the activity will still occur but with some limited changes due to additional speed zones. In addition, this figure includes landings for all of Lee County. The number of crab boats operating and the amount of blue crab landings occurring in areas that would be newly designated speed zones under this rule is unknown. Crabbing likely occurs in parts of Lee County outside of the Caloosahatchee River, including Charlotte Harbor, San Carlos Bay, Estero Bay, etc. (FWCC, 2003e). The county-wide figures provide an upper bound estimate of the economic impact on this fishery; this would assume that the regulation closed down the entire fishery, which is not the case.

In Lee County, commercial mullet fishing is also occurring in the Caloosahatchee River Manatee Refuge area. These fishermen may also be impacted by slower commuting times from boat launch (e.g., dock or ramp) to fishing grounds. However, fishing activity associated with mullet fishing generally includes slow net casting within a relatively small geographic area (FWCC, 2003e). Therefore, speed limits are likely to have a very limited effect on mullet fishing. In 2001, based on mullet landings in Lee County of 997,903 kilograms (2.2 million pounds), and the weighted average price of \$0.66 for mullet statewide, the value of the mullet fishery in Lee County is estimated to be \$1.4 million (FWCC: FMRI, 2003). Only a very small portion of these values is likely to be affected, as the activity will still occur but with some changes due to additional speed zones. In addition, this figure includes landings for all of Lee County. The amount of mullet fishing occurring in areas that would be newly designated speed zones under this rule is unknown.

St. Johns River Area: In the Lower St. Johns River Manatee Refuge, most of which is in Duval County, current commercial fishing can be divided into activity south and north of the Fuller Warren Bridge. Commercial fishing

north (i.e., downstream) of the bridge consists primarily of shrimping, while commercial fishing activity south of the bridge consists primarily of blue crab fishing. Commercial net shrimping is not allowed south of the Fuller Warren Bridge (Jacksonville Port Authority, 2003).

Commercial blue crab fishing occurs both north and south of the Fuller Warren Bridge. Crab fishing is likely to be impacted by the manatee refuge. The extension of the shoreline buffer zone may impact fishing operations because the majority of crabbing activity takes place in the submerged aquatic vegetation, which is located along the immediate shoreline (FWCC, 2003b). Therefore, when crabbers enter and exit these shoreline areas, they will be required to travel slowly (i.e., 6.4 to 12.9 km per hour (4 to 8 mph)) for not more than 152 additional meters (500 feet) (incremental to the existing variable width shoreline buffer). In addition, travel between pots within the buffer will also be slowed, thereby potentially reducing the number of crabs landed on a daily basis. However, once outside the shoreline buffer, boats can travel up to 40 km per hour (25 mph) in areas downstream of the Fuller Warren Bridge, and at unrestricted speeds upstream.

There were 61 commercial licences for blue crab issued in Duval County in 2001 (FWCC: FMRI, 2003). In 2001, based on blue crab landings in Duval County of 506,401 pounds, and the weighted average price of \$1.06 per 0.5 kilogram (pound) for blue crab statewide, the value of the blue crab fishery in Duval County is estimated to be \$537,213 (FWCC: FMRI, 2003). Only a small portion of this value is likely to be affected, as the activity will still occur but with some changes due to additional speed zones. In addition, this figure includes landings for all of Duval County. The number of crab boats operating and the amount of blue crab landings occurring in areas that are newly designated speed zones under this rule is unknown. The county-wide figures provide an upper bound estimate of the economic impact on this fishery; this would assume that the regulation closed down the entire fishery, which is not the case.

Commercial shrimping north of the Fuller Warren Bridge in the St. Johns River is likely to receive minimal impact due to the extension of year-round slow speed areas outside of the marked channels. Impacts to this industry are likely to be minimal because shrimp boats tend to trawl at a slow speed. Nonetheless, shrimp boats will still be required to travel at slower

speeds between fishing grounds, thereby potentially increasing the time it takes to access fishing areas and reducing shrimp landed on a daily basis (Jacksonville Port Authority, 2003).

The majority of commercial shrimping activity in the St. Johns River occurs between the mouth of Trout River and the Fuller Warren Bridge, which approaches the northern limit of the St. Johns Manatee Refuge (Jacksonville Port Authority, 2003). Commercial shrimping activity in Duval County also occurs along the Nassau River, which represents the border between Duval and Nassau County, and, to a lesser extent, along the Intracoastal Waterway (FWCC, 2003f). Shrimp landings in Clay County are negligible, based on the fact that commercial shrimping is not allowed upriver of the Fuller Warren Bridge. Shrimp landings in St. Johns County most likely represent activity along the Intracoastal Waterway and not in the St. Johns River area. While some limited commercial bait shrimping occurs along this stretch of river, the vast majority of commercial shrimping in this area is related to the harvest of shrimp for food production (FWCC, 2003e). In 2001, based on shrimp landings in Duval County of 997,903 kilograms (2.2 million pounds), and the weighted average price of \$2.33 for shrimp statewide, the value of the shrimp fishery in Duval County is estimated to be about \$5.2 million (FWCC: FMRI, 2003). Less than one percent of commercial shrimp landings in 2001 in Duval County are related to bait shrimp (FWCC: FMRI, 2003); therefore, these figures represent only food shrimp harvest. Only a small portion of this value is likely to be affected, as the activity will still occur but with some changes due to additional speed zones. In addition, this figure includes landings for all of Duval County. The number of shrimp boats operating and the amount of shrimp landings occurring in areas that would be newly designated speed zones under this rule is unknown. The county-wide figures provide an upper bound estimate of the economic impact on this fishery; this would assume that the regulation closed down the entire fishery, which is not the case.

Halifax River and Tomoka River Area: In Volusia County, the Halifax River and Tomoka River Manatee Refuge includes a variety of waterways, including the Tomoka River, the Tomoka Basin, Halifax Creek, and the Halifax River. In these areas, it is likely that blue crab and mullet fishing activities will be impacted by the speed zones. As discussed above for Lee County, crab boats will have to travel at slower